

CLAIMS

1) A device for machining steel connecting rods (15), each comprising a rod (2), and a big end (3) in turn comprising a first portion (6) connected integrally to the rod (2), a second portion (7) connected to said first portion (6), an eye (4), and an inner annular surface (5) defining the eye (4); the device (16) comprising a first traction member (23) which is inserted inside the eye (4) and has a first thrust surface (24) mating with said annular surface (5) at the first portion (6) and substantially in the form of a cylindrical sector having a respective radius of curvature, a second traction member (28) which is inserted inside the eye (4) and has a second thrust surface (29) mating with said annular surface (5) at the second portion (7) and substantially in the form of a cylindrical sector having a respective radius of curvature, and actuating means (30) for parting said first and said second traction member (23; 28) so as to break the second portion (7) away from the first portion (6); the device (16) being characterized in that the radius of curvature of the first thrust surface (24) is smaller than the radius of curvature of the second thrust surface (29).

2) A device as claimed in Claim 1, wherein said

actuating means (30) part said first and said second traction member (23; 28) in a direction substantially parallel to the rod.

3) A device as claimed in Claim 1, wherein said
5 annular surface (5) has a radius of curvature greater than the radius of curvature of the second thrust surface (29).

4) A device as claimed in Claim 1, and comprising a laser source (34) for forming at least one notch (12) in
10 said big end (3), between said first and said second portion (6; 7).

5) A device as claimed in Claim 1, wherein the radius of curvature of the first thrust surface (24) ranges between 80% and 99% of the radius of curvature of
15 the second thrust surface (29).

6) A device as claimed in Claim 1, wherein the radius of curvature of the first thrust surface (24) ranges between 92% and 98% of the radius of curvature of the second thrust surface (29).

7) A device as claimed in Claim 1, wherein the
20 radius of curvature of the first thrust surface (24) is 97% of the radius of curvature of the second thrust surface (29).

8) A method of machining steel connecting rods
25 (15), each comprising a rod (2), and a big end (3) in turn comprising a first portion (6) connected integrally

to the rod (2), a second portion (7) connected to said first portion (6), an eye (4), and an inner annular surface (5) defining the eye (4); the method comprising a traction step wherein relative withdrawal motion is
5 imparted to a first thrust surface (24) substantially in the form of a cylindrical sector and which mates with said annular surface (5) at the first portion (6), and to a second thrust surface (29) substantially in the form of a cylindrical sector and which mates with said
10 annular surface (5) at the second portion (7), so as to break the second portion (7) away from the first portion (6); the method being characterized in that said first and said second thrust surface (24; 29) each have a respective radius of curvature; the radius of curvature
15 of the first thrust surface (24) being smaller than the radius of curvature of the second thrust surface (29).

9) A method as claimed in Claim 8, wherein the relative withdrawal motion of said first and said second thrust surface (24; 29) is in a direction substantially
20 parallel to the rod (2).

10) A method as claimed in Claim 8, and comprising a notching step to form at least one notch (12) in said big end (3), between said first and said second portion (6; 7); said notching step preceding said traction step.

25 11) A method as claimed in Claim 10, wherein said notch is formed by means of a laser beam.

12) A method as claimed in Claim 8, wherein said annular surface (5) has a radius of curvature greater than the radius of curvature of the second thrust surface (29).

5 13) A method as claimed in Claim 8, wherein the radius of curvature of the first thrust surface (24) ranges between 92% and 98% of the radius of curvature of the second thrust surface (29).

10 14) A method as claimed in Claim 8, and comprising a cooling step to cool the connecting rod (15); said cooling step preceding said traction step.

15) A low case hardened steel connecting rod obtainable by means of a method as claimed in Claim 8.